AMENDMENTS TO THE CLAIMS

A complete listing of the claims is provided below, in accordance with the provisions of 37 CFR 1.121.

1.-19. (Cancelled)

20. (Currently amended) ~~The network according to claim 19,~~ A self-organizing network comprising:

(a)   a plurality of nodes;

(b)   at least one link interconnecting neighbouring ones of said nodes;

(c)   each of said nodes being operable to maintain information about each of said other nodes that is within a first portion of said nodes, said information including:

(i)   a first identity of another one of said nodes within said first portion;

(ii)   for each first identity, a second identity representing a neighbouring node that is a desired step to reach the said another one of said nodes respective to said first identity;

(d)   each of said nodes being operable to maintain a third identity representing a neighbouring node that is a desired step to send a request for information about said nodes in a second portion of said nodes that is not included in said first portion,

wherein said third identity is determined based on which of said neighbouring nodes most frequently appears in each said second identity.

21. (Currently Amended) The network of claim [[19]] 20 wherein each of said nodes is operable to exchange said information with its neighbouring nodes.

22. (Currently Amended) The network of claim [[19]] 20 wherein said at least one link has a set of service characteristics such that any path between two of said nodes has a cumulative set of service characteristics.

23.　(Previously presented) The network of claim 22 wherein said information includes said cumulative set; and said desired step associated with said second identity is based on which of said paths has a desired cumulative set of service characteristics.

24.　(Previously presented) The network of claim 22 wherein said service characteristics include at least one of bandwidth, latency and bit error rate.

25.　(Currently Amended) The network of claim [[19]] 20 wherein said nodes are at least one of computers, telephones, sensors, personal digital assistants.

26.　(Currently Amended) The network of claim [[19]] 20 wherein said at least one link is based on a wireless connection.

27.　(Currently Amended) The network of claim [[19]] 20 wherein a network core is formed between neighbouring nodes that determine each other is a desired step to locate said nodes within said second portion.

28.　(Previously presented) The network of claim 27 wherein each said node is operable to deliver instructions to other nodes between said core and itself to maintain information about itself.

29.　(Previously presented) The network of claim 27 wherein said information includes, for each said first identity, a value representing a distance-to-data marked stream for said node associated with said first identity.

30.　(Previously presented) The network of claim 29 wherein nodes associated with said first identity are ranked in an ascending order increasing according to said distance and said instructions are delivered to those nodes according to said rank.

31.　(Currently Amended) The network of claim [[19]] 20 comprising at least 2,000 nodes interconnected by a plurality of links.

32.　(Currently Amended) The network of claim [[19]] 20 comprising at least 5,000 nodes interconnected by a plurality of links.

33.　(Currently Amended) The network of claim [[19]] 20 comprising at least 10,000 nodes interconnected by a plurality of links.

34.   (Currently Amended) The network of claim [[19]] 20 comprising at least 100,000 nodes interconnected by a plurality of links.

35.-36. (Cancelled)

37.   (Currently amended) ~~The computer readable medium according to claim 36~~ A computer readable medium for storing a set of programming instructions for execution by, or on behalf of, a node forming part of a self-organizing network having a plurality of other nodes and at least one link interconnecting neighbouring ones of said nodes; said programming instructions for causing a computing apparatus within said node to maintain information about each of said other nodes that are within a first portion of all of said other nodes, said information including:

     (a)   a first identity of another one of said nodes within said first portion;

          (i)   for each said first identity, a second identity representing a neighbouring node that is a desired step to reach the said another one of said nodes respective to said first identity;

     said programming instructions for further causing said computing apparatus to maintain a third identity representing a neighbouring node that is a desired step to send a request for information about said nodes in a second portion of said nodes that are not included in said first portion; and

wherein said third identity is determined based on which of said neighbouring nodes most frequently appears in each said second identity.

38.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein each of said nodes is operable to exchange said information with its neighbouring nodes.

39.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said at least one link has a set of service characteristics such that any path between two of said nodes has a cumulative set of service characteristics.

40.   (Currently amended) The computer readable medium of claim 39 wherein said information includes said cumulative set; and said desired step associated with said second identity is based on which of said paths has a desired cumulative set of the service characteristics.

41.   (Previously presented) The computer readable medium of claim 39 wherein said service characteristics include bandwidth.

42.   (Previously presented) The computer readable medium of claim 39 wherein said service characteristics include latency.

43.   (Previously presented) The computer readable medium of claim 39 wherein said service characteristics include bit error rate.

44.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said nodes are computers.

45.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said nodes are telephones.

46.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said nodes are sensors.

47.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said nodes are personal digital assistants.

48.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein said at least one link is based on wireless connections.

49.   (Currently Amended) The computer readable medium of claim [[36]] 37 wherein a network core is formed between neighbouring nodes that determine each other is a desired step to locate said nodes within said second portion.

50.   (Previously presented) The computer readable medium of claim 49 wherein each said node is operable to deliver instructions to other nodes between said core and itself to maintain information about itself.

51.   (Previously presented) The computer readable medium of claim 49 wherein said information includes, for each said first identity, a value representing a distance-to-data marked stream for said node associated with said first identity.

52.   (Previously presented) The computer readable medium of claim 51 wherein nodes associated with said first identity are ranked in an ascending order increasing according to said distance and said instructions are delivered to those nodes according to said rank.

53.   (Currently Amended) The computer readable medium of claim [[36]] 37 comprising at least 2,000 nodes interconnected by a plurality of links.

54.   (Currently Amended) The computer readable medium of claim [[36]] 37 comprising at least 5,000 nodes interconnected by a plurality of links.

55.   (Currently Amended) The computer readable medium of claim [[36]] 37 comprising at least 10,000 nodes interconnected by a plurality of links.

56.   (Currently Amended) The computer readable medium of claim [[36]] 37 comprising at least 100,000 nodes interconnected by a plurality of links.

57.-63. (Cancelled)

64.   (Currently amended) A computer readable medium as claimed in claim 63 for storing a set of programming instructions for execution by, or on behalf of, a first node on a self-organizing network having a plurality of nodes and at least one link interconnecting said nodes, said instructions causing a computing apparatus to select and remove information about one or more missing nodes in said network by delaying the sending of predetermined classes of updates to said network where a node update is delayed before being sent to a neighbor node if an update about said node has not been previously sent to said neighbor.

65.   (Currently amended) A computer readable medium as claimed in claim 63 for storing a set of programming instructions for execution by, or on behalf of, a first node on a self-organizing network having a plurality of nodes and at least one link interconnecting said nodes, said instructions causing a computing apparatus to select and remove information about one or more missing nodes in said network by delaying the sending of predetermined classes of updates to said network where a node update is delayed before being sent to a neighbor node if the previous update about said node sent to said neighbor belongs to a predetermined class of updates.

66.   (Currently amended) [[A]] The computer readable medium as claimed in claim 65 where said predetermined class is a node update where said update indicates that no route is possible via said sending node.

67.-71. (Cancelled)

72.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[71]] 75 wherein said instructions further cause the computing apparatus to identify the proximity of said first node to the identified route between said source node and said destination node.

73.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[71]] 75 wherein said node on the identified route between a source node and destination node will set the importance value of said destination node to a predefined value.

74.   (Currently amended) [[A]] The computer readable medium as claimed in claim 73 where the predefined value is the highest importance value possible.

75.   (Currently amended) A computer readable medium as claimed in claim 71 for storing a set of programming instructions for execution by, or on behalf of, a first node on a self-organizing network having a plurality of nodes and at least one link interconnecting each of said nodes, said instructions causing a computing apparatus to identify the route between a source node and a destination node, wherein said instructions further cause the computing apparatus to send route updates about said destination node on a relatively more frequent basis the closer that said first node is to the route between said source node and said destination node.

76.   (Cancelled)

77.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[76]] 81 wherein said importance value is determined by how close said first node is to a specified data path or specified structure in the network.

78.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[76]] 81 wherein said instructions further cause the computing apparatus to assign a hop cost value to updates that are to be sent over said network.

79.   (Currently amended) [[A]] The computer readable medium as claimed in claim 78 wherein said hop cost value for a particular destination node is determined by an accumulation of service characteristics on the route from said node to said destination node.

80.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[76]] 81 wherein said instructions further cause the computing apparatus to communicate to other nodes that said first node wishes only to receive updates that have or exceed a predetermined importance value.

81.   (Currently amended) A computer readable medium as claimed in claim 76 for storing a set of programming instructions for execution by, or on behalf of, a first node on a self-organizing network having a plurality of nodes and at least one link interconnecting each of said nodes, said instructions causing a computing apparatus to assign an importance value to updates that are to be sent over said network, wherein said instructions further cause the computing apparatus to communicate to other nodes that said first node wishes only to receive a predetermined number of updates with the highest importance values.

82.-83. (Cancelled)

84.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[36]] 37, said instructions causing a computing apparatus to assign a value to said first node that can be taken into account during the selection of parent nodes in said network.

85.   (Cancelled)

86.   (Currently amended) [[A]] The computer readable medium as claimed in claim [[85]] 88 wherein the latency of the internal message queue of messages for a destination node is used to decide which neighbor messages for said destination node should be sent to.

87.   (Currently amended) [[A]] The computer readable medium as claimed in claim 86 wherein messages for a destination node are sent to a neighbor node if the latency to said destination node from said neighbor node is equal or less then the latency of the message queue for messages being sent to said destination node.

88.   (Currently amended) A computer readable medium as claimed in claim 85 for storing a set of programming instructions for execution by, or on behalf of, a first node on a self-organizing network having a plurality of nodes and at least one link interconnecting each of said

nodes, said instructions causing a computing apparatus to forward messages from a source node to a destination node via neighbors depending on the latency to the destination node via said neighbors, wherein messages for a destination node are not sent to a neighbor node when the neighbor node is in a specified state regarding messages for said destination node.

89.   (Currently amended) [[A]] The computer readable medium as claimed in claim 88 wherein messages for a destination node are not sent to a neighbor node when the neighbor node can not process an increased volume of messages for said destination node.

90.-106.   (Cancelled)